Clinical Decision Support (CDS) Content and Health Level 7 (HL7)-Compliant Knowledge Artifacts (KNARTs)

Primary Care: Tobacco Assessment and Cessation Counseling Clinical Content White Paper

Department of Veterans Affairs (VA)

Knowledge Based Systems (KBS)
Office of Informatics and Information Governance (OIIG)
Clinical Decision Support (CDS)

Clinical Decision Support (CDS) Content and Health Level 7 (HL7)-Compliant Knowledge Artifacts (KNARTs): Primary Care: Tobacco Assessment and Cessation Counseling Clinical Content White Paper

by Department of Veterans Affairs (VA), , , , and

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Table 1. Relevant KNART Information: Primary Care: Tobacco Assessment and Cessation Counseling KNART

Primary Care KNART	Associated CLIN
Documentation Template	CLIN0009AA

B3 Group, Inc.

Cognitive Medical Systems, Inc.

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Introduction

The VA is committed to improving the ability of clinicians to provide care for patients while increasing quality, safety, and efficiency. Recognizing the importance of standardizing clinical knowledge in support of this goal, VA is implementing the Health Level 7 (*HL7*) Knowledge Artifact Specification for a wide range of VA clinical use cases. Knowledge Artifacts, referred to as (*KNARTs*), enable the structuring and encoding of clinical knowledge so the knowledge can be integrated with electronic health records to enable clinical decision support.

The purpose of this Clinical Content White Paper (*CCWP*) is to capture the clinical context and intent of *KNART* use cases in sufficient detail to provide the *KNART* authoring team with the clinical source material to construct the corresponding knowledge artifacts using the *HL7* Knowledge Artifact Specification. This paper has been developed using material from a variety of sources: VA artifacts, clinical practice guidelines, evidence in the body of medical literature, and clinical expertise. After reviewing these sources, the material has been synthesized and harmonized under the guidance of VA subject matter experts to reflect clinical intent for this use case.

Unless otherwise noted, items within this white paper (e.g., documentation template fields, orderable items, etc.) are chosen to reflect the clinical intent at the time of creation. To provide an exhaustive list of all possible items and their variations is beyond the scope of this work.

Conventions Used

Conventions used within the knowledge artifact descriptions include:

<obtain>: Indicates a prompt to obtain the information listed
- If possible, the requested information should be obtained from the underlying system(s). Otherwise, prompting the user for information may be required
- Default Values: Unless otherwise noted, <obtain> indicates to obtain the most recent observation. It is recognized that this default time-frame value may be altered by future implementations

[...]: Square brackets enclose explanatory text that indicates some action on the part of the clinical user, or general guidance to the clinical or technical teams. Examples include, but are not limited to:

[Begin ...], [End ...]: Indicates the start and end of specific areas to clearly delineate them for technical purposes.

[Activate ...]: Initiates another knowledge artifact or knowledge artifact section.

[Section Prompt: ...]: If this section is applicable, then the following prompt should be displayed to the user.

[Section Behavior: ...]: Indicates technical constraints or considerations for the selection of items outlined in the section prompt.

[Attach: ...]: Indicates that the specified item (e.g. procedure or result interpretation) should be attached to the documentation template if available.

[Link: ...]: Indicates that rather than attaching an item (e.g. image), a link should be included in the documentation template.

[Clinical Comment: ...]: Indicates technical considerations or notes to be utilized for KNART authoring and at time of implementation planning.

[Technical Note: ...]: Indicates technical considerations or notes to be utilized for KNART authoring and at time of implementation planning.

[If ...]: Indicates the beginning of a conditional section.

[Else, ...]: Indicates the beginning of the alternative branch of a conditional section.

[End if ...]: Indicates the end of a conditional section.
☐ [Check box]: Indicates items that should be selected based upon the section selection behavior.

Chapter 1. Primary Care: Tobacco Assessment and Cessation Counseling

Clinical Context

[Begin Clinical Context.]

Tobacco use continues to be one of the leading causes of preventable death and disease in the U.S., accounting for approximately 480,000 deaths each year (U.S. Department of Health and Human Services 2014). It is incumbent upon clinicians to adhere to evidence-based practices in assisting patients who use tobacco to quit.

This knowledge artifact is intended to support the clinical provider's evaluation of tobacco use, counseling regarding tobacco cessation, and documentation of findings and clinical decisions from the evaluation and counseling process. The screening and counseling questions for the template are drawn from the Healthcare Effectiveness Data and Information Set (*HEDIS*), a tool published by the National Committee for Quality Assessment (*NCQA*) and used by more than 90 percent of America's health plans to measure performance on important dimensions of care and service (NCQA HEDIS 2018 [https://www.ncqa.org/report-cards/health-plans/state-of-health-care-quality/2016-table-of-contents/smoking-cessation]).

While the *HEDIS* tobacco measure is based on patient responses on a survey, the Veterans Health Administration (*VHA*) HEDIS-based national performance measure relies on documentation of once-a-year screening and counseling and documentation by primary care health care professionals. Work is currently underway to develop a national electronic clinical reminder to support the *VHA* HEDIS-based tobacco measure.

[Clinical Comment: *VHA* Tobacco Assessment Screening is based on the *HEDIS* survey measure *Medical Assistance With Smoking and Tobacco Use Cessation*, which consists of multiple component measures to assess rates of medical assistance for tobacco cessation (NCQA HEDIS 2018). Components of the measure include:

- Advising Smokers and Tobacco Users to Quit: Adults 18 years of age and older who are current smokers or tobacco users and who received cessation advice during the measurement year

- Discussing Cessation Medications (HEDIS label) or Offering Medications (VHA label): Adults 18 years of age and older who are current smokers or tobacco users and who discussed or were recommended cessation medications during the measurement year

- Discussing Cessation Strategies (HEDIS label) or Offering Behavioral Counseling (VHA label): Adults 18 years of age and older who are current smokers or tobacco users who discussed or were provided cessation methods or strategies during the measurement year.]

For the purposes of this knowledge artifact, tobacco products are defined as follows:

Includes cigarettes, pipe, cigars, and smokeless tobacco, such as dip, chew, snuff, and snus

Excludes e-cigarettes, Electronic Nicotine Delivery Systems (ENDS) and vaping devices

Table 1.1. Clinical Context Domains

Target User	Any clinical provider is able to screen for current tobacco use, including physicians, Advanced Practice Nurses (APNs), Physician Assistants (PAs), Registered Nurses (RNs), Licensed Practical Nurses (LPNs), pharmacists, psychologists, social workers, dentists, and substance abuse counselors

Patient	Adult patients
Priority	Routine
Specialty	Any clinical setting (ambulatory, impatient, etc.)
Location	Any clinical setting

[End Clinical Context.]

Knowledge Artifacts

[Begin Knowledge Artifacts.]

This section describes a single CDS knowledge artifact that addresses Tobacco Screening:

• A Documentation Template: Tobacco Assessment and Cessation Counseling KNART

  • Provides a structured template to document tobacco assessment and counseling

  • Includes logic for the appropriate display of documentation sections

[End Knowledge Artifacts.]

Chapter 2. Documentation Template: Tobacco Assessment and Cessation Counseling

[Begin Documentation Template.]

Knowledge Narrative

[Begin Knowledge Narrative.]

[See Clinical Context in Chapter 1.]

[End Knowledge Narrative.]

Tobacco Use History

[Begin Tobacco Use History.]

[Technical Note: Pre-populate with existing data and make available for editing.]

Current Tobacco Use

[Begin Current Tobacco Use.]

[Section Prompt: Do you currently use tobacco?]

[Section Prompt: Tobacco includes cigarettes, pipe, cigars, and smokeless tobacco, such as dip, chew, snuff, and snus. Excludes e-cigarettes, ENDS, and vaping devices.]

[Section Selection Behavior: Select one. Required.]

  ☐ Every day

  ☐ Some days

  ☐ Not at all

[Technical Note: Those patients reporting tobacco use every day or some days will be considered a Current Tobacco User.]

[End Current Tobacco Use.]

Length of Tobacco Use History

[Begin Length of Tobacco Use History.]

[Section Prompt: How long have you been using tobacco?]

[Section Selection Behavior: Select one. Required.]

  ☐ <1 year

  ☐ >= 1 year to <5 years

  ☐ >= 5 years to <= 15 years

☐ >15 years to <30 years

☐ >= 30 years

[Section Prompt: If you are a smokeer, for how many years have you smoked?]

- <obtain> Years you have smoked

  [Technical Note: Enter a number here, allowing 2 digits to the right of the decimal point.]

[Section Prompt: If you are a smoker, how many cigarettes have you smoked per day on average?]

- <obtain> Number of cigarettes smoked per day on average

[End Length of Tobacco Use History.]

Former Smoking History

[Begin Former Smoking History.]

[Technical Note: Display the following only if "Not at all" is selected in section "Do you currently use tobacco?".]

[Section Prompt: Have you ever used tobacco?]

[Section Selection Behavior: Select only one. Required.]

  ☐ Yes

  ☐ No

[End Former Smoking History.]

Quit Using Tobacco History

[Begin Quit Using Tobacco History.]

[Technical Note: Display the following only if "Former user" is selected in the section "Have you ever used tobacco?".]

[Section Prompt: How long ago did you quit using tobacco?]

[Section Prompt: Previous guidance recommended providing relapse prevention counseling for those who had quit for less than 1 year. This is not required by HEDIS, and there is limited evidence basis for relapse counseling. The provider should use clinical judgement regarding how to advise or support a patient who has only recently quit.]

[Section Selection Behavior: Select one. Required.]

  ☐ < 1 year

  ☐ >= 1 year and < 5 years

  ☐ >= 5 years and <= 15 years

  ☐ > 15 years to <= 30 years

  ☐ >= 30 years

[Section Prompt: If you were a smoker, for how many years did you smoke?]

- <obtain> Number of years

  [Technical Note: Enter a number here, allowing 2 digits to the right of the decimal point.]

[Section Prompt: If you were a smoker, how many cigarettes did you smoke per day on average?]

    <obtain> Number of cigarettes smoked per day on average

[End Quit Using Tobacco History.]

Calculate Pack Years

[Begin Calculate Pack Years.]

[Technical Note: Display this section for both current users and former users.]

[Section Prompt: Number of pack years smoking?]

[Section Prompt: Calculate pack years using data entered in this template and display in this section. Currently there is no ability to automatically calculate pack years in Computerized Patient Record System (CPRS). Number of pack years = (number of cigarettes smoked per day/20) x number of years smoked. Note that 20 cigarettes = 1 pack.]

    <obtain> Pack years

[End Calculate Pack Years.]

[End Tobacco Use History.]

Advising Users to Quit

[Begin Advising Users to Quit.]

[Technical Note: Display the following only for current tobacco users as defined in chapter 2, section 2.]

[Section Prompt: Advise tobacco user to quite.]

[Section Prompt: Quitting smoking or tobacco use is one of the most important things patients can do to protect their health, and the VA has resources to support them. Advise the patient to set a quit date; get support from family and friends; encourage the patient to review past quit attempts (What helped? What didn't?); anticipate triggers and/or challenges and plan how to cope with them; advise the patient to remove all tobacco products from home, car, work when ready to quit; include message that the combination of behavioral counseling plus the use of the United States Food and Drug Administration (FDA)-approved medications is the most effective way to quit tobacco use [U.S. Public Health Service Clinical Practice Guideline (CPG), 2008; https://bphc.hrsa.gov/buckets/treatingtobacco.pdf]. (Items above are consistent with Joint Commission Practical Counseling language).]

    ☐ Current Smoker Advised to Quit

[Section Prompt: Resources for VHA clinical providers.]

• Internet site - https://www.mentalhealth.va.gov/quit-tobacco/

• Intranet site (accessible to VA staff only) - http://vaww.publichealth.va.gov/smoking/index.asp

• Additional links within intranet site (accessible to VA staff only) : Clinical Topics - http://vaww.publichealth.va.gov/smoking/clinical.asp

• Tobacco and Health SharePoint site (accessible to VA staff only) - https://vaww.portal.va.gov/sites/tobacco/default.aspx.

• Tobacco Use Treatment PULSE site (accessible to VA staff only) - https://www.vapulse.net/community/care-topics/tobacco-use-treatment

[End Advising Users to Quit.]

Cessation Strategies - Counseling

[Begin Cessation Strategies - Counseling.]

[Technical Note: Display the following only for current tobacco user as defined in chapter 2, section 2.]

[Section Prompt: Advise patient: Counseling increases your chances of successfully quitting tobacco use. VA can help you to develop a plan and provide support, guidance, and tools to help you quit, such as a tobacco cessation clinic or group, a national quit line for veterans who receive their healthcare through VA (1-855-QUIT-VET), and information about community options. Would you like more information about how to use any of these treatment options today?]

[Section Selection Behavior: Select one. Required.]

  ☐ Yes

  ☐ No

[Technical Note: Display the following only if "yes" is selected in "Advise Patient".]

[Section Prompt: Patient educational materials available in English and Spanish.]

• VA Patient educational site - https://www.mentalhealth.va.gov/quit-tobacco/

• Patient education on treatment options -https://www.drugabuse.gov/publications/tobacco-nicotine-e-cigarettes/what-are-treatments-tobacco-dependence

[End Cessation Strategies - Counseling.]

Cessation Strategies - Medications

[Begin Cessation Strategies - Medications.]

[Technical Note: Display the following only for current tobacco users as defined in chapter 2, section 2.]

[Technical Note: Display the following prompt for all clinical roles screening patient.]

[Section Prompt: Adivise Patient: The use of FDA-approved medications, such as nicotine replacement therapy including the patch, gum and lozenge, and other medications such as varenicline, play an important role in the initial weeks and months after you quit tobacco. Medications help you cope with cravings and withdrawal symptoms and increase your chances of successfully quitting tobacco use.]

[Technical Note: Display the following prompt for MD, DO, NP, and PA credentialed clinical provider roles screening patient.]

[Section Prompt (Prescribing Provider): Advise Patient: The VA can provide you with FDA-approved tobacco cessation medications to help you quit. Would you like more information on how to use these medications and a prescription for tobacco cessation medications today?]

[Section Selection Behavior: Select one. Required.]

  ☐ Yes

[Technical Note: If "yes" is selected above, then the corresponding tobacco cessation order set should be made available for ordering providers, when such an order set is created in the future.]

  ☐ No

[Technical Note: Display the following prompt for all non-prescribing providers screening the patient.]

[Section Prompt (Nonprescribing Provider): The VA can provide you with FDA-approved tobacco cessation medications to help you quit. "Would you like to receive medication to assist with quitting tobacco use?"]

[Section Selection Behavior: Select one. Required.]

   ☐ Yes

   [Technical Note: Message sent to prescribing provider if "yes" is selected.]

   ☐ No

[End Cessation Strategies - Medications.]

Screening for Smoking Related Medical Conditions

[Begin Screening for Smoking Related Medical Conditions.]

[Technical Note: Orders and order sets referenced in this section do not yet exist as KNARTs.]

[Technical Note: Display the following section only for male patients age >= 65 and <= 75 years who have ever smoked.]

[Section prompt: The United States Preventive Services Task Force (USPSTF) recommends one-time screening for Abdominal Aortic Aneurysm (AAA) by ultrasonography in men aged 65-75 who have ever smoked. The USPSTF makes no recommendation for or against screening for AAA in asymptomatic men aged 65-75 who have never smoked.)]

<obtain> Date and results of all prior abdominal aortic aneurysm screening exams [abdominal ultrasound, abdominal Computed Tomography (CT) with or without contrast, abdominal angiogram, abdominal Magnetic Resonance Imaging (MRI)]

[Technical Note: Most clinicians completing this documentation template will not have authority to write orders, thus we are providing options for both non-prescribing and prescribing clinicians. The non-prescribing providers must choose the second option]

[Section Selection Behavior: Select any or none - only one may be selected.]

   ☐ Abdominal aortic aneurysm screening

   ☐ Message to prescribing provider suggesting abdominal aortic aneurysm screening

[Reference: USPSTF guidance [https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/abdominal-aortic-aneurysm-screening].]

[Technical Note: Display this section only for patients who meet all of the following criteria: current smokers or former smokers who quit <= 15 years ago, age >= 55 and <= 80 years, with a 30-pack year history or more, and who have not had Low-dose chest CT <= 1 year ago.]

[Section prompt: The USPSTF recommends annual screening for lung cancer with Low-dose Computed Tomography (LDCT) in adults aged 55 to 80 years who have a 30 pack-year smoking history and currently smoke or have quit within the past 15 years, and who do not have a history of lung cancer.]

<obtain> Date and results for all prior chest imaging studies (chest CT, chest X-Ray, chest MRI), as well as any history of lung cancer

[Technical Note: Most clinicians completing this documentation template will not have authority to write orders, thus we are providing options for both non-prescribing and prescribing clinicians. The non-prescribing providers would choose the second option]

[Section selection behavior: Select one only or none.]

☐ Low-dose chest CT for lung cancer screening order (for prescribing provider use only)

☐ Message to prescribing provider suggesting Low-dose chest CT for lung cancer screening order

[Reference: USPSTF guidance [https://www.uspreventiveservicestaskforce.org/Page/Document/ UpdateSummaryFinal/abdominal-aortic-aneurysm-screening].]

[End Screening for Smoking Related Medical Conditions.]

[End Documentation Template.]

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Acronyms

Acronym	Definition
AAA	Abdominal Aortic Aneurysm
APN	Advanced Practice Nurses
CCWP	Clinical Content White Paper
CPG	Clinical Practice Guideline
CPRS	Computerized Patient Record System
CT	Computed Tomography
CVD	Cardiovascular Disease
ENDS	Electronic Nicotine Delivery Systems
FDA	United States Food and Drug Administration
HEDIS	Healthcare Effectiveness Data and Information Set
HL7	Health Level 7
KBS	Knowledge Based Systems
KNART	Knowledge Artifact
LDCT	Low-dose Computed Tomography
LPN	Licensed Practical Nurse
MRI	Magnetic Resonance Imaging
NCQA	National Committee for Quality Assessment
OIIG	Office of Informatics and Information Governance
PA	Physician Assistant
PAD	Peripheral Arterial Disease
RN	Registered Nurse
SME	Subject Matter Expert
TO	Task Order
USPSTF	United States Preventive Services Task Force
VA	Department of Veterans Affairs
VACO	VA Central Office
VAMC	VA Medical Center
VHA	Veterans Health Administration